DOCUMENT RESUME

ED 304 492 UD 026 643

AUTHOR May, Carolyn S.; Farha, Jacquelyn L.
TITLE A Longitudinal Study of the Chapter 1 Prekindergarten Program in the Wichita Public Schools.
INSTITUTION Wichita Public Schools, Kans.
PUB DATE Mar 89
NOTE 21p.; Paper presented at the Annual Meeting of the American Educational Research Association (San Francisco, CA, March 1989).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Evaluative/Feasibility (142)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Academic Achievement; Basic Skills; *Compensatory Education; *Developmental Disabilities; *Educationally Disadvantaged; High Risk Students; Longitudinal Studies; *Low Income Groups; Outcomes of Education; *Preschool Children; Preschool Education; Program Evaluation; Urban Schools; Young Children
IDENTIFIERS *Early Intervention Programs; Education Consolidation Improvement Act Chapter 1; *Kansas (Wichita)

ABSTRACT

The early intervention strategies of the Wichita (Kansas) Public Schools Education Consolidation and Improvement Act Chapter 1 Prekindergarten Program made a difference in the later academic achievement of participants. The Prekindergarten program serves educationally and developmentally disadvantaged 3- and 4-year olds residing in low-income areas. This study followed 171 pupils who had been in the program in the 1982-83 school year, and who remained in the Wichita school system through 1986-87. Data were drawn from standardized test scores, records of parent contacts with school personnel and social workers, and the results of a survey of parent attitudes. Summary findings include the following: (1) half of the participants required an average of 1.5 years of additional Chapter 1 reading and mathematics services after leaving prekindergarten; (2) those participants who required more than two years of continued Chapter 1 services usually required mathematics in grades 1 and 2, and reading in grades 3 and 4; (3) retention rates for participants were slightly higher than those for the total district in grade 1, but were comparable by grade 3; (4) a higher percentage of participants were placed in special education classrooms than the general district population; and (5) there were no significant differences in the academic achievement of program participants in the second and third grades when compared to pupils from similar socioeconomic areas. Statistical data are included on 15 tables. A nine-item bibliography is included. (FMW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

2-15-89

ED304492

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☒ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Carolyn S. May
Wichita Public Schools

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

A LONGITUDINAL STUDY OF THE CHAPTER 1 PREKINDERGARTEN PROGRAM IN THE WICHITA PUBLIC SCHOOLS

Carolyn S. May
Jacquelyn L. Farha

Wichita Public Schools

Presented at the annual meeting of the
American Educational Research Association
San Francisco
March, 1989

UD 026 643

A LONGITUDINAL STUDY OF THE CHAPTER 1 PREKINDERGARTEN PROGRAM IN THE WICHITA PUBLIC SCHOOLS

Carolyn S. May, Ed.D., Director, Program Evaluation
Jacquelyn L. Farha, Assistant Supervisor, Pupil Evaluation and Testing
Wichita Public Schools

EXECUTIVE SUMMARY

The Chapter 1 Prekindergarten Program in the Wichita Public Schools, Wichita, KS, served three and four year olds who lived in Chapter 1 school areas (those with the highest concentration of low income pupils). To be eligible for service, pupils were screened and identified as having an educational need and/or were developmentally delayed.

This study followed pupils who were in the four year old program at least 100 days during the 1982-1983 academic year and who remained in the Wichita school system five years through the 1986-1987 year. Five research questions and findings were discussed.

1. What is the average number of years that program participants receive Chapter 1 service?
   The average number of years was approximately 1.5 for both the reading and mathematics programs. One/half of the pupils did not require any service after leaving prekindergarten.

2. What are the patterns and frequency of entry and exit from Chapter 1?
   For pupils receiving one year of service, there was no pattern. For pupils receiving more that two years, the most frequent pattern was grades one and two in math, grades three and four in reading.

3. What are the retention rates for those pupils? How do they compare with the retention rates of the general student population?
   Retention rates were highest in first grade (11.7%). These were slightly higher than the total district first grade retention (8.6%). By third grade retention rates were comparable to district rates (both 1.8%).

4. What proportion of program participants were placed in special education programs and in what type of program were they placed?
   Placement into Learning Disabilities and Behavioral Disordered classrooms was higher than the general population.

5. Is there a statistically significant difference between the test scores of program participants and those of other low-income pupils?
   A one-way analysis of variance revealed no statistically significant differences in the ITBS reading and total math scores of program participants in second and third grades when compared to test scores of pupils from similar socioeconomic areas.

This study provided evidence that the intervention strategies of the Wichita Chapter 1 Prekindergarten Program made a difference for 171 pupils. Although results of this study should not be generalized to other populations, it does seem to provide support to a number of studies which conclude that early intervention "works."

INTRODUCTION

In the 1960's, Chapter 1 programs were seen as a means of breaking the cycle of poverty and improving the lot of the disadvantaged population. Early intervention, the effectiveness of which was shown in a body of research conducted in the 1950's, was expected to bridge the achievement gap and eliminate the need for later remediation (Stickney & Plunkett, 1983). Prekindergarten programs were established and their short term positive effects were clear. The long term effects, however, were harder to ascertain. Attrition, for example, threatens the validity of longitudinal studies. As more subjects are lost, both internal and external validity are at risk. There are also problems in finding a comparable control group. Students are selected for Chapter 1 prekindergarten on the basis of socioeconomic level and educational need, so non-participants differ from participants in at least one of those areas. Since both socioeconomic level and ability influence achievement, it is difficult to establish cause-effect relationships for the prekindergarten program.

The Perry Preschool Study (Schweinhart & Weikart, 1985) reviewed seven longitudinal studies on the effects of early childhood education on children living in poverty. All the studies were started between 1962 and 1975 and followed subjects at least to age 9 or at most to age 21. It was concluded that prekindergarten led to "an immediate improvement in intellectual performance as represented by intelligence test scores." In the elementary school years, the group that had received early childhood education showed lower rates of placement in special education, improved academic performance, and, in two studies, lower retention rates. In three of the studies, students who attended a prekindergarten program were less likely to drop out of high school than were their peers who had not attended prekindergarten. One study included data on employment at age 19 and reported a rate of 50% for the prekindergarten group and 32% for the non-prekindergarten group.

Today, prekindergarten programs are again in the spotlight. Early childhood education programs are seen as a vehicle for reaching the "at-risk population" at an early age. Prekindergarten programs are to serve as a preventative measure before students begin their formal education. While most of the programs over the last 30 years have been funded by the federal government, there is a current trend towards state funded programs. Fifteen states have established such programs, while several other have either developed imitations or are trying to get funding legislated for early childhood programs (Rachel and Garlo, 1988).

STATEMENT OF THE PROBLEM

The Chapter 1 Prekindergarten Program in Wichita, Kansas serves three and four year old children in the areas that have the highest concentration of low income pupils. The primary goal for the program is to enable children to overcome educational and/or developmental delays. This study aimed at investigating the long-term effects of participation in the four year olds program. The study examined retention rates, patterns of participation in Chapter 1, and academic achievement of the students who were in the program in 1982-83. More specifically, the study will address the following questions:

1. What is the average number of years that program participants receive Chapter 1 services?

2. What are the patterns and frequency of entry and exit from Chapter 1 over a five-year period?

3. What are the retention rates for those pupils? How do they compare with the retention rates of the general student population?

4. What proportion of program participants were placed in special education programs and in what type of program were they placed?

5. Is there a statistically significant difference between the test scores of program participants and those of other low-income pupils?

BACKGROUND

The Chapter 1 Prekindergarten Program was started in 1966 when funding was provided for a summer program for four year olds similar to Head Start. In 1969, project Special Program to Enhance the Education of Disadvantaged Youth (SPEEDY) marked the beginning of a pattern of serving a group of children in the summer, then in the nine months program. This pattern continued through 1980. Meanwhile, the program continued to expand to include more students (three and four year olds) and to add new sites in various neighborhoods. By the academic year 1986-87, the Chapter 1 Prekindergarten Program was offered in six elementary school and Little Early Childhood Center. The program had a budget of $524,580 with a per pupil cost of $1,091. Pupil participation for that year was 481 with 88 students in the three year old program and 393 in the four year old program.

Program Participants

The Chapter 1 Prekindergarten Program served children residing in the target areas identified as having the highest concentration of low income pupils. Enrollments were ranked according to educational need and/or developmental delay as determined by the family needs assessment and the Developmental Indicators for the Assessment of Learning-Revised (DIAL-R). Children with the greatest need were given priority in selection. Children were required to be three or four years old by September 1 to be eligible for the three or four year old program respectively.

Program participants were from the various racial groups present in Wichita and are equally balanced by gender. Table I shows the distribution of participants during 1986-87.

TABLE I
PREKINDERGARTEN PARTICIPATION BY RACE AND GENDER
1986-87

Asian	Black	Hispanic	Indian American	White/ Other	M	F
7.3%	37.4%	13.5%	0.6%	41.2%	52.4%	47.6%

Program Goals

The prekindergarten program aimed at enabling children to overcome educational and/or developmental delays. The goals of the program were to help each child:

1. Achieve a positive sense of self through developing self-acceptance, self-confidence, self-reliance, and self-discipline.
2. Grow in social skills through interaction with adults and other children.
3. Develop appropriate behavior which will achieve a balance between individual behavior needs and conformity to the necessary standards of the group.
4. Build language and communication skills through the development of his/her listening and speaking abilities.
5. Develop cognitive skills through manipulative activities; exploring, discovering, and problem-solving, while engaging in formal and informal activities.
6. Broaden his/her horizons through a variety of experiences that will improve the child's understanding of the family and community.
7. Build creative self-expression through art, music, and movement.
8. Develop awareness and control of his/her body.
9. Gain knowledge, habits, and attitudes conducive to good health and safety.
10. Accept and encourage parents. Parents need to understand the interrelatedness of the developmental characteristics of their children and the learning activities in the classroom. The family should be encouraged to extend the school learnings into the home environment.

Program Implementation

Three year olds attended classes four half-days per week; four year olds attended classes five half-days per week. Classroom activities emphasized socialization skills, cognitive development, physical activities and sensory learning experiences. The staffing pattern was one teacher or child development associate for every 20 children. Each teacher or associate was assisted by a paraprofessional instructional aide. Speech, nursing and psychological services were available. A resource room was located at Little Center for children who were unable to cope with a regular class on a full time basis. Resource specialists worked with children with special needs at the other locations on a consultative basis. All children were served a snack of crackers and a hot lunch (over-income parents paid or sent lunch). Parents generally provided transportation since busing was provided to a limited number of students.

Program Evaluation

The Chapter 1 Evaluation Department conducted annual evaluations for the Chapter 1 Prekindergarten Program. The Cooperative Preschool Inventory was administered in the fall and spring to assess growth in cognitive and social skills. The DIAL-R, motor skills section, was given as a pretest in the spring then given as a posttest to a 25% random sample of children enrolled the following spring. Records of parent contacts with teacher, social workers, and administrators were kept and reported. A locally developed survey was given to a 20% random sample of parents to assess their attitudes towards their child's education and the role they can play in it.

During the past five years, the Chapter 1 Prekindergarten Program has achieved the prespecified objectives. More than 80% of the participants made the expected gains of the Cooperative Preschool Inventory (10 or more NCE's for three year olds; 5 or more for four year olds). Table II summarizes the average NCE gains over the past five years. Most students made normal or greater gains on the DIAL-R motor skills section. Parents responded positively to questions about the Chapter 1 program and their contribution to their children's learning.

TABLE II
AVERAGE NCE GAINS
COOPERATIVE PRESCHOOL INVENTORY

Year	Three Year Old Program	Four Year Old Program
1982-83	+32	+18
1983-84	NA	NA
1984-85	+29	+24
1985-86	+25	+24
1986-87	+24	+19
1987-88	+29	+20

FINDINGS

During the academic year 1982-83, 268 students participated in the four year olds program. Of those who had participated for at least 100 days, 171 students (64%) were active students in Wichita five years later, 1987-1988. Those 171 pupils comprised the data bank for the five year study of the Chapter 1 Prekindergarten Program. The distribution of those students in the fall of 1987 was as follows:

GRADE	NO. OF STUDENTS	PCT
5	1	0.6%
4	122	71.4%
3	48	28.1%

RESEARCH QUESTION 1:

What is the average number of years that program participants receive Chapter 1 services?

Participation in the Mathematics Program

The Chapter 1 Elementary Mathematics Program was offered in grades K-6. Hence, the prekindergarten class of 1982-83 had the opportunity to participate in the math program for up to four years. Students were selected for participation if their scores on the total math subtest of the ITBS fell below the 26th percentile. A locally developed math test with teacher referral was used in the absence of ITBS data. The table below shows the number of participants during each of these years.

PreK 1982-83	K 1983-84	Grade 1 1984-85	Grade 2 1985-86	Grade 3 1986-87
171	36	44	34	28

Of the 171 students, 84 (49.1%) participated in the math program for at least one year between 1983-84 and 1986-87. The average number of years spent in the math program was 1.69. The other 87 (50.9%) "graduated" from the program and had not received any further remediation from Chapter 1 math.

YEARS IN PROGRAM	NO. OF STUDENTS	PERCENT
0	87	50.9%
1	42	24.6%
2	28	16.4%
3	12	7.0%
4	2	1.2%

Participation in the Reading Program

The Chapter 1 Corrective Reading Program was offered in grade 1 (second semester only) and grades 2-6. Hence, the prekindergarten class of 1982-83 had the opportunity to participate in the reading program for up to three years. Students were selected for participation if their scores on the reading or vocabulary subtests of the ITBS fell below the 26th percentile. An informal reading assessment with teacher referral was used in the absence of ITBS data. The table below shows the number of participants during each of these years. (1983-1984 was the year these pupils were in kindergarten.)

PreK 1982-83	Grade 1 1984-85	Grade 2 1985-86	Grade 3 1986-87
171	15	60	49

Of the 171 students, 78 (45.6%) participated in the reading program for at least one year between 1984-85 and 1986-87. The average number of years spent in the reading program was 1.58. The other 93 (54.4%) "graduated" from the program and had not received any further remediation from Chapter 1 reading.

YEARS IN PROGRAM	NO. OF STUDENTS	PERCENT
0	94	54.4%
1	39	22.8%
2	32	18.7%
3	7	4.1%

RESEARCH QUESTION 2:

What are the patterns and frequency of entry and exit from Chapter 1 over a five year period?

TABLE III
PATTERNS OF PARTICIPATION IN THE MATH PROGRAM

YEARS IN PROGRAM	1983-84	1984-85	1985-86	1986-87	NUMBER
1	X				12
		X			10
			X		11
				X	9
				TOTAL	42
2	X	X			12
	X		X		1
	X			X	2
		X	X		7
		X		X	3
			X	X	3
				TOTAL	28
3	X	X	X		3
	X		X	X	2
	X	X		X	5
		X	X	X	2
				TOTAL	12
4	X	X	X	X	2
				TOTAL	2

TABLE IV
PATTERNS OF PARTICIPATION IN THE READING PROGRAM

YEARS IN PROGRAM	1984-85	1985-86	1986-87	NUMBER
1	X			3
		X		22
			X	14
			TOTAL	39
2	X	X		4
	X		X	1
		X	X	27
			TOTAL	32
3	X	X	X	7
			TOTAL	7

RESEARCH QUESTION 3:

What are the retention rates for those pupils? How do they compare with the retention rates of the general student population?

Of the 171 subjects in this study, 48 (28.1%) have repeated one grade between 1983-84 and 1986-87. One student did not attend kindergarten and was in the fifth grade in 1987-88. The table below compares the retention rates of program participants to those of the general student population.

TABLE V
RETENTION RATES

YEAR	GRADE REPEATED	RETENTION RATE PK PARTICIPANTS	RETENTION RATE OF GEN. POPULATION
82-83	PreK	1.8%	NA
83-84	KG	6.4%	5.0%
84-85	1	11.7%	8.6%
85-86	2	6.4%	3.2%
86-87	3	1.8%	1.8%

Note: The retention rates of the general student population were based on the 1985-86 data. Retention data for the other years were not available.

RESEARCH QUESTION 4:

What proportion of program participants were placed in special education programs and in what type of program were they placed?

A total of 40 children from the sample had been placed in special education classes and/or resource rooms by the 1986-87 school year. The number and percent in each category are listed in the following table. District percentages are also listed.

TABLE VI
SPECIAL EDUCATION PLACEMENTS
PREK PARTICIPANTS

CATEGORY	PREK NO.	PREK %	DISTRICT %
Developmental Disabilities Kindergarten	3	1.8%	.5%
Learning Disabilities	14	8.2%	3.0%
Behavioral Disordered	6	3.5%	1.0%
Educable Mentally Handicapped	1	.6%	1.0%
Severely Multiply Handicapped	1	.6%	.2%

RESEARCH QUESTION 5:

Is there a statistically significant difference between the test scores of program participants and those of other low-income pupils?

Data were gathered from district testing which utilized the Iowa Tests of Basic Skills (ITBS), spring administration. The second and third grade ITBS total math and reading comprehension percentiles were collected for the pupils who had the prekindergarten experience. These percentiles were converted to normal curve equivalents (NCE) for data analysis. (Of the original 171 pupils in the study, approximately 140 had available ITBS scores).

A control group for each of these school years (1985-1986, second grade; 1986-1987, third grade) was selected. The control groups were a random selection of pupils from the Chapter 1 schools who had not participated in the Chapter 1 Prekindergarten Program. It was assumed that pupils from Chapter 1 schools would have similar socioeconomic backgrounds.

The null hypotheses were:

1. Second graders having been in Chapter 1 prekindergarten and second graders not having been in Chapter 1 prekindergarten represent the same population in mean ITBS reading scores.

2. Second graders having been in Chapter 1 prekindergarten and second graders not having been in Chapter 1 prekindergarten represent the same population in mean ITBS total math scores.

3. Third graders having been in Chapter 1 prekindergarten and third graders not having been in Chapter 1 prekindergarten represent the same population in mean ITBS reading scores.

4. Third graders having been in Chapter 1 prekindergarten and third graders not having been in Chapter 1 prekindergarten represent the same population in mean ITBS total math scores.

A one-way analysis of variance was performed on the data to test these null hypotheses at the .05 level of confidence. There were no statistically significant differences. Each hypothesis is spoken to with summary tables following.

Hypothesis No. 1:

The means for second grade ITBS reading NCEs were: Chapter 1 Prekindergarten, 42.312 (N=141); no Chapter 1 Prekindergarten, 43.979 (N=140). The one way analysis of variance performed on these data indicated the means were not significantly different as shown in Table VI. The null hypothesis was not rejected.

TABLE VII
SECOND GRADE READING

ANOVA SUMMARY TABLE

SOURCE	SUM SQRES	DF	MEAN SQRES	F-RATIO	PROB
Between GRPS	195.1081	1	195.1081	.4787	.4896
Within GRPS	113723.2	279	407.61		
TOTAL	113918.3	280			

Hypothesis No. 2:

The means for second grade ITBS total math NCEs were: Chapter 1 Prekindergarten, 50.114 (N=140): no Chapter 1 Prekindergarten, 52.679 (N=140). The one way analysis of variance performed on these data indicated the means were not significantly different as shown in Table VII. The null hypothesis was not rejected.

TABLE VIII
SECOND GRADE MATH

ANOVA SUMMARY TABLE

SOURCE	SUM SQRES	DF	MEAN SQRES	F-RATIO	PROB
Between GRPS	460.2919	1	460.2919	1.2128	.2717
Within GRPS	105508.7	278	379.5276		
TOTAL	105969	279			

Hypothesis No. 3:

The means for third grade ITBS reading NCEs were: Chapter 1 Prekindergarten, 40.898 (N=137); no Chapter 1 Prekindergarten, 39.459 (N=135). The one way analysis of variance performed on these data indicated the means were not significantly different as shown in Table VII. The null hypothesis was not rejected.

TABLE IX
THIRD GRADE READING

ANOVA SUMMARY TABLE

SOURCE	SUM SQRES	DF	MEAN SQRES	F-RATIO	PROB
Between GRPS	140.7102	1	140.7102	.3347	.5634
Within GRPS	113504.1	270	420.3855		
TOTAL	113644.8	271			

Hypothesis No. 4:

The means for third grade ITBS total math NCEs were Chapter 1 Prekindergarten, 45.679 (N=137); no Chapter 1 Prekindergarten, 42.248 (N=137). The one way analysis of variance performed on these data indicated the means were not significantly different as shown in Table IX. The null hypothesis was not rejected.

TABLE X
THIRD GRADE MATH

ANOVA SUMMARY TABLE

SOURCE	SUM SQRES	DF	MEAN SQRES	F-RATIO	PROB
Between GRPS	806.2023	1	806.2023	2.4286	.1203
Within GRPS	90293.44	272	331.9612		
TOTAL	91099.63	273			

DISCUSSION

All evaluations of Chapter 1 Programs are hampered by the simple fact that if the selection process is done correctly, there is no comparison group. The Chapter 1 Prekindergarten Program is no exception. It was assumed that most four year old children in the Chapter 1 target areas were screened for educational need and developmental delay, and those children with the greatest need were served. It was also an expectation that if the intervention strategies of Chapter 1 prekindergarten were successful, the children would exhibit similar characteristics of performance in later school years as children who were not eligible for Chapter 1 prekindergarten. It is with these assumptions in mind that the findings were discussed.

Questions 1 and 2 dealt with Chapter 1 participation of the prekindergarten pupils in grades one through four. One half of the prekindergarten participants were not in need of Chapter 1 services during those years; of those pupils requiring service, the majority of them needed only one year. This was an important finding as it was not unusual for up to 80% of pupils in these schools to be selected for Chapter 1 programs.

There did not appear to be any pattern of service for those pupils in Chapter 1 for only one year. For those pupils in Chapter 1 math for two years, the most frequent pattern was grade one and two. For those pupils in Chapter 1 reading the most frequent pattern was third and fourth grade.

Retention rates of Chapter 1 prekindergarten participants were somewhat higher than the retention rates of the general population. However it should be kept in mind that the comparison included all schools in the district, not just those in the lower socioeconomic areas. In addition it appeared that the rates were starting to even out by the third grade. The highest rate occurred in first grade with 11.7%. District retention rates were only available for one year of the five year period studied. However district administrators stated that other years probably were comparable to that specific year.

Special education placement of the Chapter 1 participants into Learning Disabilities (LD) and Behavioral Disordered (BD) was noticeably higher than the general population. Again the comparison group is the entire district population.

The findings of ITBS results in reading and math for Chapter 1 prekindergarten participants as compared to non-participants were striking. There were no statistically significant differences in the NCEs of prekindergarten participants and the random control group in grade two math; grade two reading; grade three math; or grade three reading.

The null hypotheses for the statistical tests stated that the mean ITBS scores for both groups were drawn from the same population.

These hypotheses were not rejected. Therefore, it would appear that the children who had been identified as having educational need and/or developmentally delayed were at least similar to children from lower socioeconomic groups who had not been so identified as four year olds.

This study of the Wichita Chapter 1 Prekindergarten Program provides evidence that the intervention strategies made a difference for the 171 pupils still in Wichita after five years. The evidence suggests that the children who had the Chapter 1 prekindergarten experience were at least on the same level as children from the same socioeconomic area who had not had the prekindergarten experience, but who were not screened as being educationally needy or developmentally delayed.

Results of this study cannot be generalized to other prekindergarten programs or to other geographic areas. It would appear, however, that the results support findings from previous studies. "Studies have shown that preschool can be the first step towards success for poor children in school and later in life." (U.S. Department of Education, 1987).

Selected Bibliography

Amarose, R. A., Brown, J. A., Duffy, K. L., Morgan, K. L., & Thompson, G. (1986). Analysis of school districts records to study the effectiveness of Chapter 1 programs over a five year period. Columbus, OH: Columbus Public Schools.

Lazar, I., & Darlington, R. B. (1978, October). Lasting effects after preschool: A report of the consortium for longitudinal studies, summary report. Washington, D. C.: U.S. Department of Health, Education and Welfare. (Grant No. 90C-B-11.)

Morado, C. (1986, July). Prekindergarten reports for 4-year-olds: Some key issues. Young Children.

Schweinhart, L. J., & Weikart, D. P. (1985, April). Evidence that good early childhood programs work. Phi Delta Kappan, 545-553.

Schweinhart, L. J., & Weikart, D. P. (1986). What do we know so far? A review of the Head Start Synthesis Project. Young Children, 41, (2), 49-55.

Stickney, B. D., & Plunkett, V. R. L. (1983, December). Closing the gap: A historical perspective of the effectiveness of compensatory education. Phi Delta Kappan.

U. S. Department of Education (1987). What works: Schools that work, educating disadvantaged children. Washington, D. C.: Author.

Weikart, D. P. (1984, Winter). Changed lives: A twenty-year perspective on early education. American Educator, 22-43.

Zimilies, H. (1986). Rethinking the role of research: New issues and lingering doubts in an era of expanding preschool education. Early Childhood Research Quarterly, 1, 189-206.